



NINTH GRADE PHYSICS REVERSES SCIENCE ACHIEVEMENT GAP

You can now officially stop thinking of the achievement gap as **intractable**. A remarkable approach to teaching high school science has extinguished the achievement gap in science.

The New Jersey Center for Teaching and Learning’s Progressive Science Initiative® (PSI®), a program designed to advance attainment in science, has given schools serving high percentages of low-income students and students of color the ability to outperform schools with less diverse, more affluent students.

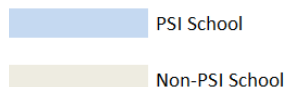
In 2014, eight of the top twenty New Jersey schools for Advanced Placement Physics B participation were schools that use PSI. The PSI schools served dramatically more students of color (72%) than the non-PSI schools (11%). The same is true of economic status, where PSI schools served more low-income students (61%) than the non-PSI schools (8%).

Top 20 NJ Schools for AP Physics B Participation - May 2014

State Rank	Rate	Name	District	Economically Disadvantaged	Black & Hispanic
1	47.3%	Bergen Tech Teterboro	Bergen Vocational	12%	24%
2	37.6%	Liberty High School	Jersey City	62%	77%
3	24.2%	Glen Ridge High School	Glen Ridge	0%	12%
4	24.2%	Technology High School	Newark	91%	90%
5	23.8%	Bernards High School	Somerset Regional	9%	16%
6	23.8%	Madison High School	Madison Boro	7%	11%
7	23.6%	Cresskill High School	Cresskill Boro	4%	10%
8	22.6%	Dr Ronald McNair High School	Jersey City	47%	38%
9	22.3%	Chatham High School	Chatham	2%	5%
10	19.4%	Highland Park High School	Highland Park Boro	33%	32%
11	19.2%	Bergenfield High School	Bergenfield	35%	52%
12	17.7%	Henry Hudson Regional School	Henry Hudson Regional	27%	8%
13	16.3%	Ridge High School	Bernards Township	1%	4%
14	15.1%	Ramapo High School	Indian Hills	0%	4%
15	14.7%	East Orange Stem Academy High School	East Orange	74%	100%
16	14.2%	American History High School	Newark	85%	97%
17	14.2%	Moorestown High School	Moorestown Township	10%	12%
18	13.7%	Perth Amboy High School	Perth Amboy	84%	97%
19	13.4%	Montgomery High School	Montgomery Township	4%	6%
20	12.6%	Robbinsville High School	Robbinsville Township	5%	7%

PSI High Schools **61.2%** **71.8%**

non-PSI High Schools **8.5%** **10.6%**



Data Source: 2014 NJ School Performance Report (<http://education.state.nj.us/pr/>) AP Participation Rates calculated by dividing the number of exams taken for AP Physics B by the average number of students per grade.

PSI works because it makes sense to districts, schools, teachers, parents, and students. It requires all students to study physics in the ninth grade; requires physics teachers to be able to pass the final test in the course they teach; gives teachers real-time feedback to guide

instruction; and makes free online teacher presentations, assignments, homework, and labs available to parents, teachers, and students 24/7.

PSI's success proves the achievement gap is not a fact of life. It is a consequence of educational inequality. Where all students are taught physics early and well, success follows. Where physics instruction is not required, students are shut out.

When it comes to science, the achievement gap is an elective. Too many schools ignore physics. There are too few physics teachers, too few physics courses offered, and too few physics students. Schools serving low-income students are less likely to offer physics than are other schools. These realities create the achievement gap.

The Progressive Science Initiative has shown the way. The New Jersey Center for Teaching and Learning challenges educators and policy makers to demonstrate the will to eliminate the achievement gap in science.

The federal government can act to eliminate the achievement gap in science.

- *Prioritize funding for programs requiring physics for all students*
- *Prioritize funding to create physics teachers*
- *Help states collaborate to create a mutually recognized physics test*

States can act to eliminate the achievement gap in science.

- *Develop a physics-specific certification for teachers*
- *Remove barriers to alternative pathways to physics certification*
- *Make physics a high school graduation requirement*
- *Develop a state test for physics*
- *Recommend a physics-chemistry-biology instructional sequence.*

Districts can act to eliminate the achievement gap in science.

- *Hire physics-qualified teachers to teach physics*
- *Offer effective, swift, alternative pathways for teachers to become physics teachers*
- *Require physics for all high school students*
- *Recommend student complete the physics-chemistry-biology sequence*

Parents can act to eliminate the achievement gap in science.

- *Ask their districts about its approach to science instruction and demand the best*
- *Support local and state changes that put the physics-chemistry-biology sequence in place*

Learn more at www.njctl.org